



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,606	04/15/2004	Heikki Saha	014975-097	6390
21839	7590	06/03/2005	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			TRUONG, THANH K	
POST OFFICE BOX 1404			ART UNIT	
ALEXANDRIA, VA 22313-1404			PAPER NUMBER	
			3721	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/824,606

Applicant(s)

SAHA, HEIKKI

Examiner

Thanh K. Truong

Art Unit

3721

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to applicant's amendment received on March 15, 2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Muona (5,699,261).

Muona discloses an apparatus comprising:

a body (a rock drilling equipment and percussion machinery),

a percussion device arranged inside the body to generate impact pulses to a tool connectable to the rock breaking machine (column 2, lines 43-45),

one or more sensors 7 arranged to monitor the operation of the apparatus (column 2, lines 9-12),

a control unit 1,

the sensor 7 are arranged to transmit measuring information to the control unit 1,

the control unit comprises a memory unit 3 for storing basic settings for the rock breaking machine and further a processing unit 5 that is, during operation, arranged to form parameters describing the operating state of the rock breaking machine on the basis of the basic settings and measuring information, and

the control unit 1 comprises an connection to a data communications link that enables communication between the control unit and at least one unit 8 external to the rock breaking machine for controlling the operation of the rock breaking machine so as to achieve the desired operating state of the rock breaking machine (column 3, lines 18-26).

4. Claims 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Tuunanen (5,934,387).

Tuunanen discloses an apparatus comprising:

a body 1,

a percussion device arranged inside the body to generate impact pulses to a tool connectable to the rock breaking machine (column 3, lines 1-6),

one or more sensors 6, 8, 9 10 arranged to monitor the operation of the apparatus,

a control unit 7,

the sensor are arranged to transmit measuring information to the control unit (column 3, lines 20-24),

the control unit 7 comprises a memory unit for storing basic settings for the rock breaking machine and further a processing unit that is, during operation, arranged to form parameters describing the operating state of the rock breaking machine on the basis of the basic settings and measuring information (column 3, lines 47-66), and

the control unit 7 comprises an connection to a data communications link that enables communication between the control unit and at least one unit 8 external to the rock breaking machine for controlling the operation of the rock breaking machine so as to achieve the desired operating state of the rock breaking machine.

Tuunanen further discloses the control unit 7 is arranged inside the body of the rock breaking machine 1 and at least some of the sensors are integrated as part of the control unit (the information from sensors is used to operate the machine, thus they are integrated as part of the control unit).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuunanen (5,934,387) in view of Dickel et al. (5,560,437).

Tuunanen discloses an apparatus comprising:

a carrier 1,

at least one feeding beam 3 (a-c),

a rock drilling apparatus 5 (a-c) movable in relation to the feeding beam and having a percussion device (column 3, lines 2-6),

one or more sensors 6, 8, 9, 10 arranged to the rock drilling apparatus to monitor the operation of the rock drilling apparatus,

at least one first control unit 7 arranged on the carrier of the rock drilling rig to control the operation of the drilling apparatus on the basis of measuring information received from the sensors;

the first control unit is arranged to control the operation of the rock drilling apparatus on the basis of the parameters received from the second control unit 6, 8, 9 10 and instructions given to the first control unit.

Tuunanen discloses the claimed invention, but does not expressly disclose that the second control unit comprises a memory unit for storing basic settings for the drilling apparatus and a processing unit for calculating parameters describing the operating state of the rock drilling apparatus on the basis of the basic settings and measuring information.

Dickel discloses an apparatus (figures 1-6) comprising: a first control unit 42 including among others, computer 7, memory 45 and data processor 44; a second control unit, located on the device 1, comprises data memory 19, data processor 18 and data transfer device 20; and the second control unit storing basic settings for the drilling apparatus and calculating the parameters describing the operating state of the drilling apparatus on the basis of the basic settings and measuring information.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified Tuunanen apparatus by

Art Unit: 3721

incorporating the second control unit as taught by Dickel providing a wireless telecommunication link capability between the first control unit and second control unit.

The modified Tuunanen further discloses the second control unit (18, 19, 20) is arranged inside the body 1 of the drilling apparatus (Dickel, figures 1 and 2); and at least some of the sensors 6, 8, 9, 10 (Tuunanen, figures 1) are integrated as part of the second control unit (the information from sensors is used to operate the machine, thus they are integrated as part of the control unit).

7. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Tuunanen (5,934,387) in view of Dickel et al. (5,560,437).

As discussed above in paragraph 6 of this office action, Tuunanen and Dickel disclose the claimed invention, but does not expressly disclose that the first data communications link between the first control unit and the second control unit is a CAN bus. However, the Applicant also discloses that: "Other suitable fixed data transmission channels may also be applied. In some cases even a wireless link between the control units is possible". Therefore, it would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have used the wireless link between the control units as taught by Dickel providing flexible capability of link between control units.

Response to Arguments

8. Applicant's arguments filed March 15, 2005 have been fully considered but they are not persuasive.

9. In response to the Applicant's argument that Muona does not disclose at least one sensors arrange to monitor the operation or a processing unit arrange to form parameters describing the operating state of the rock breaking machine on the basis of the basic settings and measuring information as set forth in claim 4, the examiner disagrees.

Muona discloses one or more sensors 7 arranged to monitor the operation of the apparatus, column 2, lines 9-12:

"the arrangement further comprises a separate diagnosing unit capable of monitoring the functioning of set parameters so as to find out if the settings are appropriate. This allows any illogical or faulty operations to be detected." (emphasis added).

Muona further discloses in figure 1 (only drawing) electronic control unit (1), keyboard (2), operation unit (5), memory units (3) and (4), and the sensor (diagnosing unit 7). One skill in the art would recognize that figure 1 discloses the basic elements of a processing unit (see also column 2, lines 34-43 and lines 56-67).

10. In response to the Applicant's argument that Tuunanen does not disclose at least "one or more sensors arranged to monitor the operation of the rock breaking machine", or "a processing unit that is, during operation, arranged to form parameters describing the operating state of the rock breaking machine on the basis of the basic settings and measuring information", as set forth in claim 4, the examiner disagrees.

Tuunanen discloses one or more sensors 6, 8, 9, 10 arranged to the rock drilling apparatus to monitor the operation of the rock drilling apparatus, and the sensors are arranged to transmit measuring information to the control unit (column 3, lines 20-24).

Tuunanen further discloses (column 3, lines 47-66) that the control unit 7 is a processing unit that capable of storing data, calculating, processing the data and control the operation of the machine.

11. In response to the Applicant's argument that Tuunanen's control unit (7) and the sensors are not integrated as part of one device, the examiner disagrees.

Integrate: to make part of a larger unit (Merriam-Webster's Dictionary of Law, © 1996 Merriam-Webster, Inc.).

Therefore, Tuunanen clearly discloses that the control unit 7 is arranged inside the body of the rock breaking machine 1 and at least some of the sensors are integrated as part of the control unit (the information from sensors is used to operate the machine, thus they are integrated as part of the control unit).

In response to the Applicant's argument that "it would not be obvious for a person skilled in the art to combine Tuunanen and the teaching of Dickel" because the applied references relate to totally different drilling techniques. The examiner disagrees.

It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Dickel is relied upon for the teaching of the second control unit that

includes a memory unit for storing basic settings for the drilling apparatus and a processing unit for calculating parameters describing the operating state of the rock drilling apparatus on the basis of the basic settings and measuring information.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

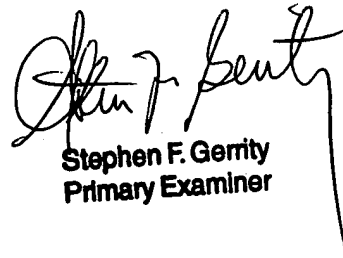
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh K. Truong whose telephone number is 571-272-4472. The examiner can normally be reached on Mon-Thru 8:00AM - 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3721

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tkt
May 24, 2005.



Stephen F. Gerrity
Primary Examiner